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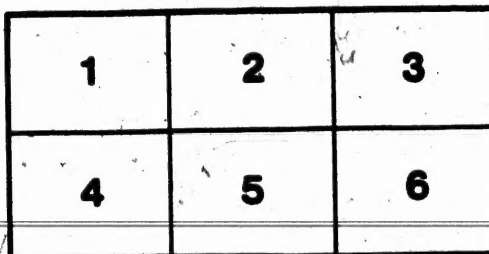
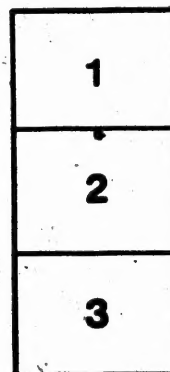
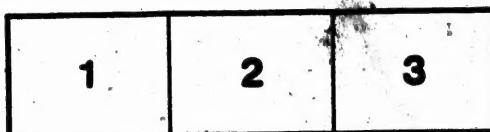
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**Great Western Railway.**

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**SPECIFICATION**

**OF A**

**SIX-WHEELED**

**FIRST AND SECOND CLASS**

**COMPOSITE CARRIAGE.**

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# Great Western Railway.

## SPECIFICATION

### *Six-wheeled First and Second Class Composite Carriage,*

WITH  
Two compartments for eight First Class Passengers each, two compartments for fourteen Second Class Passengers each, at the ends, and one compartment in the centre for Passengers' Luggage, with hinged seats, so as to be capable of being used for Second Class Passengers.

### General Dimensions.

|                                                                   | Ft. | In |
|-------------------------------------------------------------------|-----|----|
| Extreme length at base .....                                      | 27  | 9  |
| Ditto width at do. ....                                           | 9   | 4  |
| Height from floor to under side of top side frames .....          | 5   | 6  |
| Height from floor to underside of roof boards in the centre ..... | 6   | 0  |

### Dimensions of Compartments.

The two first class passenger compartments to be 6-ft. 4-in. from centre to centre of partitions. The centre compartment, for passengers' luggage or for second class passengers, to be 5-ft. 1-in. from centre to centre of partitions. The end second class passenger compartments to be 5-ft. each from centre of partitions to outside of ends.

### Description and quality of Materials.

The bottom and top sides and bottom end frames, buffer planks and floor bearers, to be of Memel oak, each in one length. The four corner pillars to be of English oak. The door pillars, standing pillars, and other framing, to be of English ash. The roof, seats and partition boards to be of American yellow-pine (the roof boards to be in one length.) The floor boards to be of red deal, 9-in. wide. The panels to be of papier maché.

### Bottom Frame and Floor.

The bottom side frames to be 3-in. deep by 7-in. wide at the top, bevelled off to the sweep of the standing pillars, rebates formed in them for the doors to shut against, and for receiving the floor boards, as shewn.

The bottom end frames to be 3-in. deep by 7-in. wide, rebated to receive the floor boards, and morticed for the upright end framing.

The bottom sides and ends to be framed together, as shewn, and secured by strong wrought iron knees inside and a wrought iron angle plate sunk flush outside.

The floor bearers to be 3-in. by 1½-in., morticed into the side frames with barefaced tenons, the shoulders cut bevel and let into the lips of the mortices, according to the detail drawing.

Trimming bearers, 3-in. by 1½-in., parallel with the side frames, to be formed between the others at each wheel, to support the floor where cut away for the wheel cases, and under each buffer plank bracket. The wheels to be 9-ft. 2-in. apart centres.

The flooring to be in two thicknesses of ¾-in. red deal, laid crossing each other at an angle of 45-deg. with the sides. The boards to be kept flush with the top of the side frames, and cut to fit closely round the wheel cases. The whole to be closely screwed together and to the floor bearers and rebates.

### Side Elevation.

The four corner pillars to be 4-in. square, bevelled to the sweep of the body, and cut under as shewn for the lap of the panels, tenoned into the bottom frames and strengthened by a strong wrought iron knee firmly bolted on each side at top and bottom; the internal corners to be chamfered off from the lining boards.

The standing pillars and door pillars to be straight from the roof to the elbow rails, then swept under 2½-in. Rebates to be formed for the doors to shut against, as shewn. The tenons to have screws through the shoulders to strengthen them, and wrought iron knees bolted to them and to the bottom and top sides and buffer planks. The middle pillars to have grooves to receive the ends of the horizontal partition boards, into which they are to be screwed—the lips of the grooves to have screws through them 6-in. apart, to strengthen them. Thin wrought iron angle plates to be screwed to these boards and to the pillars, at intervals of twelve inches, centres.

The quarter light and elbow rails to be cut to the form shewn, having rebates formed in them for the quarter light frames. All the joints to be strongly screwed and accurately fitted.

The top side frames to be cut to the sweep shewn on the plan, with rebates for the tops of the doors, mortices for the door and middle standing pillars, and notches for the elbow rails and roof sticks.

The quarter lights to be of the height and width shewn and marked on the drawing. The frames to be of the best figured mahogany, 2-in. by 1-in., jointed at the curve in an approved manner, mitred at the corners, and fastened from the inside through the rebates with screws.

The glass to be of the best plate, free from stains and air bubbles, and not less than ⅝-in. thick.

The doors to have sliding lights, with improved spring fittings to prevent their rattling, and ventilators over them—those for the first class to be hung with balance weights. The ventilators to be made with slot openings, with a sliding cover inside, and fastened in an approved manner. The centre compartments to have strong hinged wire guards inside—to protect the glass when used for luggage—to fold and fasten down when used for passengers.

The doors to have brass plating of proper size, and to be made to fit accurately. The under rebates in the side frames to be faced with iron plates ½-in. thick by the width of the rebates.

The panels for the sides to be of papier maché ⅝-in. thick, in one piece from the roof to the elbows, and in one piece from the elbows to the under side of the bottom side frames, and between the doors, and doors and ends, lapping each other at the elbows, as shewn. Brass beading to be fixed along the elbows at the lap and at the centre of the partitions, as shewn.

The panels to be of even and sound surface, and regular thickness, hard baked and well oiled. Great care to be taken in driving the pins, not to damage the surface. The pins are not to be punched under the surface, but left flush and filed off smooth, so as to dispense with putty stopping.

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## End Elevation.

The bottom ends to be 3-in. deep by 7-in. wide, with rebate for the floors, mortices for the upright bars, framed into the bottom sides and strengthened as before described at the four corners with iron knees inside, and angle plates flush outside.

A buffer plank of Memel oak, 1-ft. 4-in. deep by 5½-in. thick, to be fitted between the corner pillars at each end and bolted through to the bottom frame and under carriage frame, and strengthened with two strong wrought iron knees each, firmly bolted to the under frame and under carriage frame, as shewn.

The upright bars to be framed between the horizontal bars and end buffer planks. The panels to be of papier maché, as before described. Each end to be in four pieces, mitred at the corners with the side panels, with a brass bead over the joints, in the centre, and across the ends at the lap.

## Roof.

The roof sticks to be 2½-in. by 2-in., cut to the proper sweep and flat rounded underneath, pitched in the manner shown into the top side frames and strongly screwed thereto.

The boarding to be of ¾-in. board, ploughed, tongued and beaded in the second class and luggage compartments, in single lengths, to be covered with good glueing canvass, and two coats marine glue outside, before being covered with the roof cloths.

The roof cloths to be of an approved description, in one piece, well strained in laying, turned under the eaves and fastened by the eaves moulding with screws.

Each carriage to have three roof lamps let through the roof in the centre of the partitions, as shewn.

The roof sticks to be framed into trimming pieces where cut away for the lamps.

The roof lamps to be of the same size and description as the latest improved roof lamps at present in use on the Great Western Railway, to be provided with all necessary fittings, outside protectors, &c., accurately fitted into place. The edge of the partitions, where cut away, to be padded with horse-hair and faced inside with a moulding.

## Partitions and Seats.

The partitions between the compartments to be in two thicknesses of ¾-in. board, ploughed, tongued and beaded in the second class and luggage compartments, crossing each other at right angles, vertically and horizontally. The horizontal boards to be fitted and screwed into the grooves in the middle standing pillars and roof sticks, and fastened in addition with thin wrought iron angle plates, as before described, and secured to the floor by fillets. The boards to be well and closely screwed together. A dog-box to be formed under the seats, as shewn. The seats of the second class compartments to be worked to the form shewn. Five of the carriages to have one of the first class compartments divided by sliding doors.

Hinged seats, to turn upwards, to be fitted into the centre compartments, with wrought iron props and thumb screws, with sunk nuts, for fastening them up to the partitions when used to carry luggage.

The chair sides for the first class passenger compartments to be of sound, dry English elm, cut to an approved template, the elbows to be 6-in. wide in front and 4½-in. at back. The seats to have shallow front rails, as shewn. Strong webbing to be strained between the front and back rails, and warped with the same lengthways, for the cushions to rest upon.

## Trimmings of First Class Compartments.

The lining to be an approved shade of best brown West Country woollen cloth, worth at the present time 11s. per yard of 60-in. in width. The backs to be stuffed with best curled horse-hair, with springs, and padded to the height shewn, full at the bottom, according to an approved template. Above the backs and elbows, and along the roof, to be lined with patent glazed linen, of straw-colored ground and approved pattern.

A line of broad seaming lace, of approved size, colors and pattern, to be fixed all round above the stuffing covering the nailing of the linen, and a moulding, gilt, painted, satin wood, or otherwise covered as may be determined round the angle of the roof, and up the corners. The painted linen to be kept up against the roof boards, between the roof sticks, over the space between the seats to give additional head room.

The inside of the doors to be lined and stuffed in the usual manner without pockets.

The Cushions to be single, with springs, stuffed to not more than 2½-in. thick on the edge, according to the sample cushion and instructions, and bound round the edge with seaming.

The elbows to be stuffed with horse-hair, and covered with best Morocco skins of a color to match the cloth lining.

The front rail of the seats to be padded and covered with a broad lace, of approved pattern and color to match the other laces.

The pasting, seaming, and window lace, to be of the appropriate width and colors, and of approved pattern.

The arm holders to be of broad lace, with tassels and roses, sewn on cloth borders—stuffed with horse-hair, and lined with morocco; cloth welts to be nailed round the door standing, pillars for the doors to shut closely against.

Lace hat strings to extend across the roof, in the usual way; ivory headed nails to be used in all the internal fittings—for fastening the lace and strings.

Strong white leather stop straps, to be screwed to all the doors, and pass through a mortice in the seat-prop inside the standing pillars with approved fastening, to prevent the doors from opening too far.

Strong white leather glass strings, with cut ends, to be attached by brass plates and knobs to all the windows of the second class and luggage compartments.

The carpet to be of the best Brussels, "dogs-foot" pattern, 2-ft. in width, cut to fit the wheel cases, bound round the edges and kept from shifting by leather straps and brass buttons. The wheel cases to be covered with carpet of the same description, tacked to the floor. Stuffed rolls of carpet to be tacked across the doors to prevent draft. Umbrella nets of worsted cord, and color to match the trimmings to be fixed over each seat, at the usual height; the rods to be of birds-eye maple, the brackets of brass or bronze.

All the windows of the first class compartments to have brown silk curtains; on brass rods with rings and brackets, the door window blinds to be on spring rollers, with cords and tassels. The glass strings to have ivory rollers of approved pattern.

The space between the ventilator rails in the doors to be covered over with vulcanized India-rubber webbing underneath, so fixed as to press against the top of the glass frame when shut up, to prevent draft.

## Mountings.

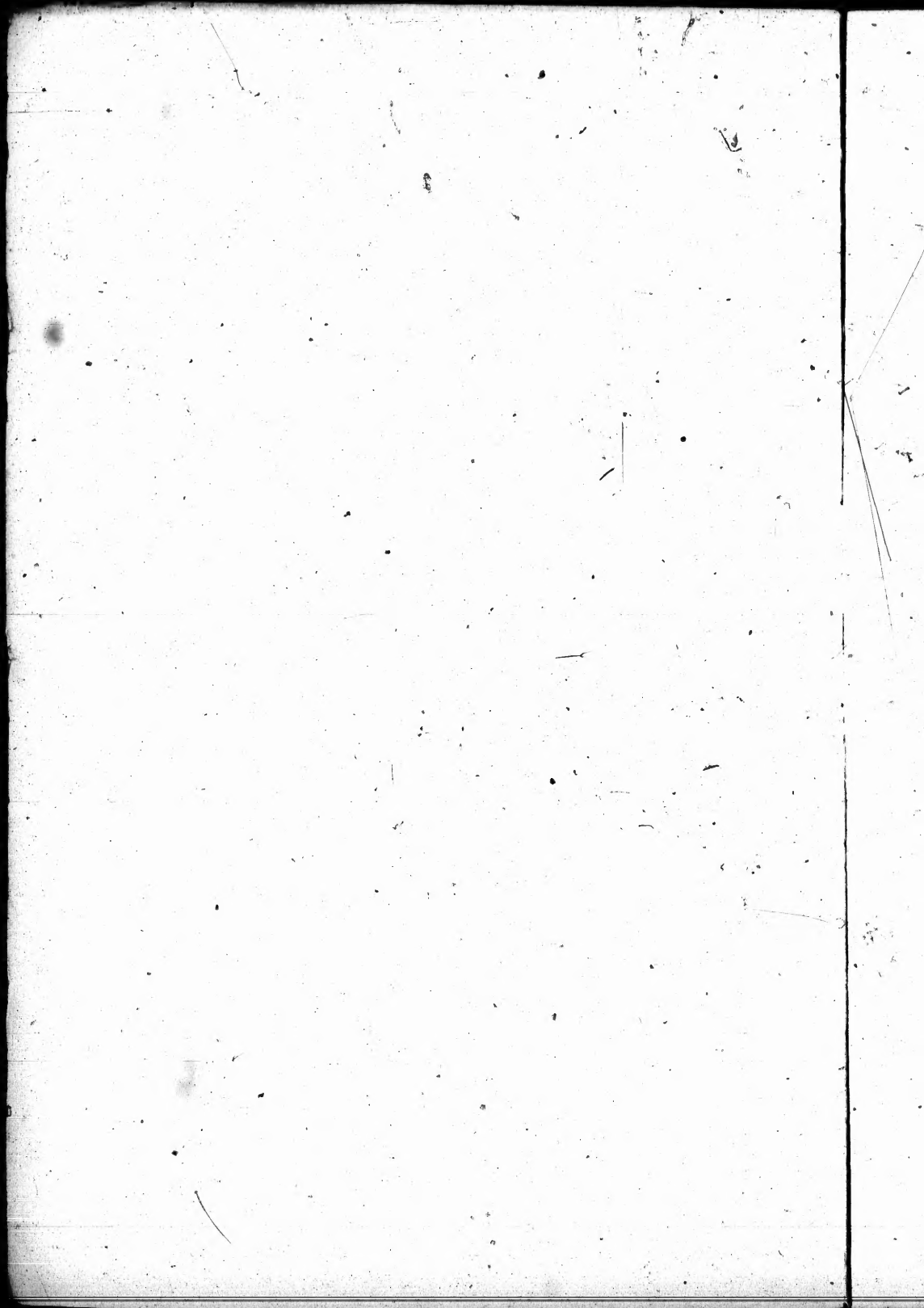
Brass plating to be put on all the doors, and brass beading down the centre, between the compartments and along the laps of the upper panels of the sides and ends, and over the joints of the end panels, as shewn.

Brass commode and door handles, with shield cut inside. Private locks, with brass escutcheons to the key holes, top door handles and side lamp irons. Roof lamps and lamp protectors.

Staples to be fixed to the sides of the carriage, as shewn for attaching "station" and "ladies carriage" label boards.

Brass glass string fasteners. Ivory knobs and silk cords for fastening the quarter light blinds. Ivory plates with engraved number on each door inside.

Ivory window lifters for the balance windows of the first class compartments.





## Painting and Varnishing.

The whole of the wood work outside to be painted 2 coats tinted zinc color before the panels are put on. The exterior, except the roof, to have four coats zinc white and lamp black, each coat rubbed down with dry pumice stone, seven coats filling up, each coat rubbed down with dry pumice stone, then the whole rubbed down with pumice stone and water, two coats zinc white and lamp black, each coat faced with pumice stone and water; three coats of brown to sample, the first two coats rubbed down with glass paper, one coat black on the upper panels, then two coats black japan.

The whole to be picked out and fine lined according to instructions, then the whole to have four coats of best copal body varnish, (from an approved maker) the first three coats of varnish to be each flatted; the wire gauze of the ventilators to be painted brown, picked out and shaded as louvres.

The painted linen of roof to have one coat wainscot varnish. The interior of centre and second class compartments to be painted and grained wainscot. The outside of the roof to have two coats of stone color, the edges black; under the seats to be painted two coats brown or stone color, as may be directed; imitation ventilators to be painted over all the quarter lights. First and second class to be written in gold on the ventilator rail of each compartment respectively in 14-in. upright Roman capitals: Great Western Railway Company to be written in gold in 2-in. upright Roman capitals, on the middle panels of the passenger compartments, and the Company's arms and crest on the lower panels of the doors, as may be directed.

## Generally.

All the framing materials to be of the best description of their respective kinds, dry and well seasoned and free from sap and other defects; all mortices and tenons to be draw-bored for the pins; all the cloth, and painted linen trimmings to be of the best quality of their respective kinds, and according to the approved samples; all the joints of the wood-work to be put together with white lead and the framing primed before the panels are put on.

The whole of the work to be done in a substantial and workmanlike manner, to the satisfaction of the engineer, who shall have full power to reject all or any such carriages or parts that are not in full accordance with the spirit and intention of this specification; The contract shall include all work necessary to, or implied, in the full carrying out and completing of the carriage, fitting and fixing the body to the under frame, maintaining the work generally, except in cases of damage by accident, in good condition and proper repair for 12 months after the date of completion and delivery.

The carriages to be completed according to Specification, and fitted and bolted to the under carriage frame and delivered to the company on the rails at any of their stations, in equal numbers

and if not so delivered and fixed to the frames within the above periods respectively, the contractor shall forfeit to the company as damages twenty shillings per week per carriage for each week he shall exceed the time specified for delivery.

No advantage to be taken of any omission of details in the drawings or in this specification, as full explanation in detail will be given should any part not be sufficiently shewn or understood.

The terms and conditions of payment to be specified in the Tender

## FORM OF TENDER.

of \_\_\_\_\_  
do hereby engage to construct and deliver

Composite Carriages according to the foregoing Specification, and the

Drawing therein referred to, for the sum of \_\_\_\_\_

for each Carriage.

to be delivered by \_\_\_\_\_

Payments to be made as follows:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Date: \_\_\_\_\_

NOTE.—The Form of Tender must NOT be detached from the Specification.



